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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/582,991

07/16/2007

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4662-202

8163

23117

7590

03/28/2008

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EXAMINER

BARRY, CHESTER T

ART UNIT

PAPER NUMBER

1797

MAIL DATE

DELIVERY MODE

03/28/2008

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/582,991	<b>Applicant(s)</b> STEENBAKKERS ET AL.	
	<b>Examiner</b> CHESTER T. BARRY	<b>Art Unit</b> 1797	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 02 January 2008.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-4 and 7-12 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 11 and 12 is/are allowed.
- 6) ☒ Claim(s) 1-4 and 7-10 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

Art Unit: 1797

Claims 1 – 4, 7 – 8 are rejected under 35 USC Sec 103(a) as obvious over Jackson and Lacey.

USP 6280625 to Jackson describes a second embodiment of an invention in which a biologically active packing is placed at a subterranean location, i.e., “in the soil” (as recited in applicant’s claims), within a wellbore. Air from any source is admitted into the device to effect air lift of contaminated groundwater from one aquifer so as to flow over a packing on which biological decontamination takes place. The specific nature of the means by which the air is pressurized and admitted through the air line 3 or 53 to the wellbore is not specifically disclosed (col 6 line 20). It is not clear, for example, whether the air source is simply an above-ground gas cylinder from which the air is merely released without any pumping thereof, or whether the air source is a blower or other means for pressurizing (i.e., pumping) the air down the air line.

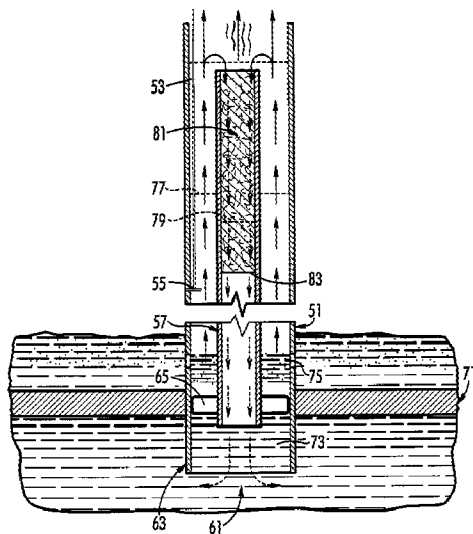


FIG. 2

At col 7 line 43, USP 6370946 to Lacey teaches that well-known sources of the air include a compressed gas cylinder or a compressor or blower. It is well known that a compressor “pumps” air to a pressurized state. It would have been obvious to have pumped air into the air line using a compressor or blower located above ground as Jackson’s air source insofar as compressed gas cylinders and blowers are conventional sources of air, as shown by Lacey.

Per claim 2, it would have been obvious to have reinoculated the biologically active packing continually to ensure an effective treatment.

Per claim 3, the lowermost edge of the packing 83 is in the groundwater (not shown in Fig. 2).

Art Unit: 1797

Per claim 4, the contaminated water is brought up by the air lift principle over the biologically active packing.

Per claim 7, the contaminated water is repeatedly contacted with the packing.

Per claim 8, Jackson describes a wide variety of contaminants, at least some of which the skilled artisan would have understood were soluble in groundwater.

Claims 9 - 10 are rejected under 35 USC Sec 103(a) as obvious over Jackson, Lacey and Sorenson. It would have been obvious to have added an electron acceptor because the art recognizes that subterranean bioremediation often requires addition of an electron acceptor, as shown, for example, by USP 7045339 to Sorenson. It is also well known to add methanol or other carbon-bearing electron acceptors to facilitate conversion (denitrification) of nitrate to nitrogen, as also shown by Sorenson.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action.<sup>1</sup> Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

/Chester T. Barry/  
Primary Examiner, Art Unit 1797  
571-272-1152

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<sup>1</sup> None of Applicant's prior claims recited contacting the groundwater and biologically active layer with the aid of a gas **and** pumping.